BRUHAT BANGALORE MAHANAGARA PALIKE

NAME OF WORK: **Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To32.**

CONSULTANT:

BVH CONSULTING ENGINEERS

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NAME OF WORK:Package2 Improvements to roads and drains providing amenities construction of RO water plant Bangalore one center in ward no.7 & 8 Byatarayanapura Division as per annexure Go No UDD 217 SFC 2016 Dated 28.5.2016 works Sl No for Ward No. 7 12 To 23 & Ward No. 8 24 To 32.

Client : Executive Engineer, Byatarayanapura Division, NO.2152/20, Defence colony, sahakara Nagara, Bangalore-92

Name of the Agency : Benaka Developers & Projects Pvt. Ltd.

Reference: Agreement NO.BBMP/EE/BTP/AG/007/16/000043/16-17 Dated : 16/01/2018

Sl.no	Description of the Item	Comments/Observation
1	KSRRB M300-1. Earth work excavation by manual means in ordinary soil involving an average horizontal throw upto 2 meters and an average lift upto 0.5m, excavated surface levelled and sides neately dressed, the disposed earth to be levelled neatly after breaking of clods complete as per specification. MORTH / Chapter 3 (P.No.142, I.No.19.1 of PW, P&IWTD SR 2016-17)	Work done up to the billed quantity and quantity is satisfactory
2	Removing & Refixing Stone slabs of drains and Pointing in C.M(1:3) (P.No.25, I.No.5.33 of PW, P&IWTD SR 2016-17)	Work done up to the billed quantity and quantity is satisfactory
3	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 10cms thick (P.No.25, I.No.5.31.2 of PW, P&IWTD SR 2016-17)	Work done up to the billed quantity and quantity is satisfactory
4	Providing granite Slabs of Selected quality roughly dressed and fixed in cement mortor (1:6) including fixing curing etc,. Complete. 7.5cms thick (P.No.25, I.No.5.31.1 of PW, P&IWTD SR 2016-17)	Work done up to the billed quantity and quantity is satisfactory
7	KSRB 4-1.2: Providing and laying in position plain cement concrete of mix 1:3:6 with OPC cement @ 220kgs, with 40mm and down size graded granite metal coarse aggregates @ 0.892 cum and fine aggregates @ 0.465 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.2 of PW,P&IWTD S.R 2016-17)	Work done up to the billed quantity and quantity is satisfactory

For B.V.H. Consulting Engineers

Proprietor

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8	KSRB 5-14: providing and constructing load bearing wall with solid concrete blocks having block density not less than 1800 kg/m3 of size solid block 400x150x200mm having a minimum average compressive strength of 4.00 N/mm2 confirming to IS 2185(Part 1):2005 and constructed with CM 1:4 as per IS 2572:2005 including cost of all materials labour charges, scaffolding, curing, hire charges of machineries etc., complete as per specifications. KBS No. 5.4 (P.No.24, I.No.5.26.2 of PW, P&IWTD SR 2016-17)	Work done up to the billed quantity and quantity is satisfactory
9	KSRB 5.2-3: Providing and constructing granite size stone masonry in foundation cement mortor 1:6, stone hammered dressed in courses not less than 20cms high, bond stones at 2m. apart in each course including cost of materaials, labour, curing complete as per specifications. Specifcation No. KBS 5.1.13. (P.No.23, I.No.5.6 of PW, P&IWTD S.R 2015-16)	Work done up to the billed quantity and quantity is satisfactory
11	KSRB 15.1.1 Providing flush pointing to square rubble, course or uncoursed stone masonry with cement mortar 1:3, 20mm deep, after raking joints to depth of 20mm nicely lining, including cost of materials, labour, curing complete as per specifications. (P.No.112, I.No.15.1 of PW, P&IWTD S.R 2015-16	Work done up to the billed quantity and quantity is satisfactory
12	KSRB 4-1.6: Providing and laying in position plain cement concrete of mix 1:2:4 with cement @ 240kgs, with 20mm and down size graded granite metal coarse aggregates @ 0.878 cum and fine aggregates @ 0.459 cum, machine mixed, concrete laid in layers not exceeding 15 cms. thick, well compacted, in foundation and plinth, including cost of all materials, labour, HOM of machinery, curing complete as per specifications. Specification No. KBS 4.1, 4.2. (P.No.12, I.No.4.6 of PW,P&IWTD S.R 2015-16)	Work done up to the billed quantity and quantity is satisfactory
13	Providing and fixing RCC Precast cover slab of 100mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)	Work done up to the billed quantity and quantity is satisfactory

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28	Providing and fixing Pre cast solid concrete kerb stones made out of CC 1:2:4 with top and bottom width 114 and 165mm respectively, 400mm high and 450mm in length finished with CM 1:3 plastering and finishing cutting, including formwork, curing, including cost of all materials, labour, hire charges of machinery, loading, unloading, lead and lift, transportation etc., complete (P.No.25, I.No.5.30 of PW,P&IWTD S.R 2016-17	Work done up to the billed quantity and quantity is satisfactory
29	KSRRB 800-1. Painting two coats after filling the surface with synthetic enamel paint in approved shades on new plastered concrete surfaces, with materials, labour complete as per specifications. MORTH Chapter 8 (P.No.182, I.No. 24.1 of PW,P&IWTD SR 2016-17)	Work done up to the billed quantity and quantity is satisfactory
14	Providing and fixing RCC Precast cover slab of 250mm thick for drain in cement concrete M20 using graded granite jelly 20mm and down size with steel reinforcement, including form work, lift charges, curing and concrete finished surfaces on both sides etc, complete and as per drawing and the directions of Engineer in-charge. (Data Rate)	Work done up to the billed quantity and quantity is satisfactory
15	KSRRB M300-52.2. **Scarifying Existing Bituminous surface** to a depth of 50mm by Mechanical Means. Scarifying the existing bituminous road surface to a depth of 50mm and disposal of scarified material and complete as per specifications. MORTH Specification No. 305.4.3 (P.No.148, I.No.19.59 of PW,P&IWTD S.R 2016-17	Work done up to the billed quantity and quantity is satisfactory
16	KSRRB M300- **Scarifying Existing Granular Surface** to a Depth of 50mm by Manual Means. KSRRB M300-52.1. Scarifying the existing granular road surface to a depth of 50mm and disposal of scarified material and complete as per specifications. MORTH Specification No. 305.4.3 (P.No.148, I.No.19.58 of PW,P&IWTD S.R 2016-17)	Work done up to the billed quantity and quantity is satisfactory

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17	KSRRB M300-14. **Excavation for roadwork in soil with hydraulic excavator** of 0.9 cum bucket capacity including cutting and loading in tippers, trimming bottom and side slopes, in accordance with requirements of lines, grades and cross sections, and transporting to the embankment location and complete as per specifications. MORTH Specification No.301 (P.No.448, I.No.19.14 of PW,P&IWTD S.R 2016-17)	Work done up to the billed quantity and quantity is satisfactory
20	KSRRB M 400-17, Providing, laying, spreading and compacting graded stone aggregate to **wet mix macadam** specification including premixing the Material with water at OMC in mechaniqal mix plant carriage ' of mixed Material by tipper to site, laying in uniform layers with paver in sub- base/ base course on well prepared surface and compacting with vibratory roller to achieve the desired density.complete as per specifications. MORTH Specification No. 406 (P.No.158, I.No.20.18 of PW,P&IWTD SR 2016-17)	Work done up to the billed quantity and quantity is satisfactory
21	KSRRB M 500-6, Providing and applying **primer coat** with SS bitumen emulsion on prepared surface of granular Base such as WBM WMM including clearing of road surface and spraying primer at the rate of 0.60 kglsqm using mechanical means complete as per specifications. As per MORTH specification clause No. 502 (P.No.161, I.No.21.6 of PW,P&IWTD SR 2016-17)	Work done up to the billed quantity and quantity is satisfactory
22	KSRRB 500-2: Cleaning the existing black topped surface with brooms, soft brushes and finally dusting with old gunny bags and / or compressed air to receive bituminous treatement including cost of all materials, labour, HOM of machineries complete as per specifications. MORTH Spec, Chapter 5 (P.No.161, I.No.21.2 of PW,P&IWTD SR 2016-17	Work done up to the billed quantity and quantity is satisfactory
23	KSRRB M500-7 : Providing and applying **tack coat** using 80/100 grade bitumen (VG10) on prepared black topped surfaces at 2.5 Kg per 10 sqm, heating bitumen in boiler fitted with spray set (excluding cleaning of road surface) including cost of all materials, labour, HOM of machineries complete as per specifications.MORTH / Chapter 5 (P.No.161 I.No.21.7 of PW,P&IWTD SR of 2016-17)	Work done up to the billed quantity and quantity is satisfactory

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24	KSRRB M500-16. Providing and laying **dense bituminous macadam** 50-75mm compacted thickness with 4.5% **VG-30 Bitumen** using 40/60 TPH capacity H.M.P, using crushed aggregates of grading II, premixed with VG 30 grade bituminous binder and transporting the hot mix to work site, laying with mechanical paver to the required grade level and alignment rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MORTH table 500-10, complete in all respects complete as per specification MORTH specification No. 507 (P.No.162 I.No. 21.17.6 of PW,P&IWTD S.R 2016-17)	Work done up to the billed quantity and quantity is satisfactory
25	KSRRB M500-19. Providing and laying **bituminous concrete** 30-40 mm compacted thickness with VG30 Bitumen grade using 40-60 HMP using crushed aggregates of grading II, premixed with bituminous binder at 5.4% of mix and filler, transporting the hot mix to work site, laying with a mechanical paver finisher to the required grade, level and alignment, rolling with smooth wheeled, vibratory and tandem rollers to achieve the desired compaction as per MoRT&H specification clause No. 500.9 complete in all respects as per specifications. MORTH Specification No. 509 (P.No.165 of I.No.21.22.6 in PW,P&IWTD S.R 2016-17)	Work done up to the billed quantity and quantity is satisfactory
30	KSRRB M800-13. Providing and laying of hot applied thermoplastic compound 2.5 mm thick including reflectorising glass beads at 250 gms per sqm area, thickness of 2.5mm is exclusive of surface applied glass beads as per IRC:35. The finished surface to be level, uniform and free from streaks and holes complete as per specifications. MORTH Specification No. 803.(P.No.185, I.No.24.15 of PW,P&IWTD SR 2016-17)	Work done up to the billed quantity and quantity is satisfactory

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26	**Cement concrete pavement.**Construction of un-reinforced plain cement concrete pavement, thickness as per design, over a prepared sub base with OPC cement or any other type as per clause 1051.2.2 design mix M20/M30 , with 25mm and down size graded granite metal coarse aggregates and fine aggregtes , with superplastisiser @3lts confirming to IS9103-1999 Reaffirmed-2008 , mixed in a concrete mixer of not less than 0.6 cum capacity and appropriate weigh batcher as per approved mix design, laid in approved fixed side form work (steel channel, laying and fixing of 125 micron thick polythene film, wedges, steel plates including levelling the form work as per drawing). Spreading the concrete with shovels, rackers compacted using needle, screed and plate vibrator and finished in a continuous operation including provision of contraction, expansion, construction and longitudinal joints including groove cutting charges, joint filler, separation membrane, selant primer, joint sealant, admixtures as approved, curing compound, finishing to lines and grades as per drawing complete as per specifications. - M30 (at 360Kg per cum coarse aggregate @ 0.69cum and fine aggregate @ 0.46cum) ((P.No.177, I.No.22.6.1 of PW,P&IWTD SR 2016-17)	Work done up to the billed quantity and quantity is satisfactory
27	Vaccum de-watering with vaccum pump and suction mat and compaction with skin floater clubbed with floating disc including cost of generator, HOM of machinery, Screed Vibratory, Power Floater, blade and disc etc., with all lead and lift.(P.No.177, I.No.22.7 of PW, P&IWTD SR 2016-17)	Work done up to the billed quantity and quantity is satisfactory
	Add cost of Waste Plastic @ 8% of Bitumen Weight	Work done up to the billed quantity and quantity is satisfactory

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5/3/18